

**WHAT IS CLAIMED IS:**

1 1. A disposable chromatography cartridge for separating a chemical contained in a  
2 solution comprising  
3 a vessel having an inlet and outlet, and  
4 a monolith chromatography stationary phase inside said vessel,  
5 said vessel having a flexible wall that is deformable by externally applied force so as  
6 to reduce a volume within said vessel.

1 2. The cartridge of claim 1 wherein said vessel is tubular.

1 3. The cartridge of claim 2 wherein said vessel is cylindrical.

1 4. The cartridge of claim 1 wherein said flexible wall is made of plastic.

1 5. The cartridge of claim 1 wherein said monolith chromatography stationary phase is  
2 formed within said vessel.

1 6. The cartridge of claim 1 wherein said monolith chromatography stationary phase is  
2 preformed and thereafter inserted into said vessel.

1 7. The cartridge of claim 1 wherein said monolith chromatography stationary phase is  
2 a material selected from the group consisting of methacrylates, agarose based materials,  
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.

1 8. Chromatography apparatus for separating a chemical contained in a solution  
2 comprising  
3 a vessel having a flexible wall that deforms in response to externally applied pressure  
4 so as to reduce a volume within said vessel,  
5 a monolith chromatography stationary phase inside said vessel, and  
6 a wall deflector that deflects said flexible wall so as to reduce the volume within said  
7 vessel.

1           9. The apparatus of claim 8 wherein said wall deflector includes an outer  
2    pressurizable chamber, and said vessel is mounted within said chamber such that said flexible  
3    wall is exposed to increased fluid pressure within said chamber.

1           10. The apparatus of claim 8 wherein said wall deflector includes a mechanical  
2    member that applies force to said flexible wall to deform said flexible wall.

1           11. The apparatus of claim 8 wherein said vessel is tubular, said flexible wall extends  
2    around a periphery of said vessel.

1           12. The apparatus of claim 8 wherein said wall deflector includes a clamping  
2    structure that applies force to said wall at a plurality of locations around said periphery.

1           13. The apparatus of claim 8 wherein said monolith chromatography stationary phase  
2    is a material selected from the group consisting of methacrylates, agarose based materials,  
3    cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.

1           14. A method of separating a chemical contained in a solution comprising  
2    providing a vessel having a flexible wall, and inlet and outlet, and a monolith  
3    chromatography stationary phase inside said vessel,  
4    supplying said solution under pressure to said inlet,  
5    applying external force to said flexible wall to deform said flexible wall, and  
6    removing separated solution from said outlet.

1           15. The method of claim 14 wherein said applying external force includes exposing  
2    said flexible wall to increased fluid pressure within a pressurizable chamber.

1           16. The method of claim 14 wherein said applying external force includes applying  
2    force via a mechanical member.

1           17. The method of claim 16 wherein said vessel is tubular, said flexible wall extends  
2    around a periphery of said vessel, and said mechanical member includes a clamping structure  
3    that applies force to said wall at a plurality of locations around said periphery.

1 18. The method of claim 14 wherein said monolith chromatography stationary phase  
2 is a material selected from the group consisting of methacrylates, agarose based materials,  
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.

1 19. A method of making a disposable chromatography cartridge for separating a  
2 chemical contained in a solution comprising  
3 providing a vessel having an inlet and outlet and a flexible wall that is deformable by  
4 externally applied force so as to reduce a volume within said vessel, and  
5 providing a monolith chromatography stationary phase inside said vessel.

1 20. The method of claim 19 wherein said providing a monolith chromatography  
2 stationary phase includes forming said monolith chromatography stationary phase within said  
3 vessel.

1 21. The method of claim 19 wherein said providing a monolith chromatography  
2 stationary phase includes preforming said monolith chromatography stationary phase outside  
3 of said vessel and thereafter inserting said monolith chromatography stationary phase into  
4 said vessel.

1 22. The method of claim 14 wherein said monolith chromatography stationary phase  
2 is a material selected from the group consisting of methacrylates, agarose based materials,  
3 cellulose, acrylamides, polystyrene divinyl benzene and silica based materials.